UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,033	03/02/2004	Sandra Kelly-Achle	MEG-210.1 US-1	1250

29425 7590 03/02/2006

LEON R. YANKWICH
YANKWICH & ASSOCIATES
201 BROADWAY
CAMBRIDGE, MA 02139

EXAMINER	
HINES, JANA A	

ART UNIT	PAPER NUMBER
1645	

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/791,033	KELLY-AEHLE, SANDRA	
	Examiner	Art Unit	
	Ja-Na Hines	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2005*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 22-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-16 and 22-34* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's request for reconsideration of the of the election/restriction of the last Office action is persuasive and, therefore, the action of August 31, 2005 has been withdrawn.

Election/Restrictions

2. Claims 1-16 and 22-34 are generic to the following disclosed patentably distinct species:

Species A wherein the enteropathogenic bacterium *Salmonella typhimurium* strain provides for a mutation in the *asdA3* gene which eliminates aspartic acid semialdehyde dehydrogenase;

Species B wherein the enteropathogenic bacterium *Salmonella typhimurium* strain provides for a mutation in the asdA3 gene which eliminates aspartic acid semialdehyde dehydrogenase and has the additional mutation of providing for the deletion of the *thyA* gene to impose a thymidine requirement;

Species C wherein the enteropathogenic bacterium are an avirulent *Salmonella* which contains a mutation in the *phoP* gene, wherein the avirulent *Salmonella* is unable to cause *Salmonella*-based disease symptoms and is able to colonize in lymphoid tissue for a sufficient time to induce antibody and cellular immunity and wherein the strain retains the properties of avirulence and immunogenicity of a *Salmonella* strain;

Species D wherein the enteropathogenic bacterium are a derivative of a pathogenic strain of bacteria characterized by: a) a lack of a functioning native chromosomal gene encoding a first enzyme which is a B-aspartic semialdehyde

dehydrogenase; b) the presence of a first recombinant gene encoding a second Asd enzyme wherein the first recombinant gene cannot recombine to replace the defective chromosomal gene; c) the presence of a second recombinant gene encoding a desired polypeptide and d) physical linkage between the first recombinant gene and the second recombinant gene, wherein loss of the first recombinant gene causes the bacteria to lyse when in an environment which requires expression of the first recombinant gene for cell survival;

Species E wherein the enteropathogenic bacterium comprises a live avirulent *Salmonella*, having a mutation in a *cdt* gene, where the Salmonella has the phenotype of failure to colonize deep tissue;

Species F wherein the enteropathogenic bacterium are live avirulent *Salmonella choleraesuis* obtained from a pathogenic strain of *S. choleraesuis*, and where the avirulent *S. choleraesuis* has been made avirulent by an inactivating mutation in a *cya* gene and an inactivating mutation in a *crp* gene;

Species G wherein the enteropathogenic bacterium are live avirulent *Salmonella typhi* that is obtained from a pathogenic *S. typhi* strain and is made avirulent by an inactivating mutation in the structural *cya* gene and an inactivating mutation in the structural *crp* gene;

3. The species are independent or distinct because the method of delivering a protein wherein the method utilizes different enteropathogenic bacteria having a variety of different functions and abilities. The groups are drawn to different strains of

bacterium, and different properties for each bacterium, I.e., some must be live avirulent strains, while other must be a derivative of a pathogenic strain of bacteria. The species of bacterium are also drawn to divergent mutations, such as mutations that affect different genes and different enzymes. Furthermore, each bacterium performs its function based on different mutations, thus the bacterium are structurally and functionally divergent. For instance, only Species B requires an enteropathogenic bacterium *Salmonella typhimurium* strain where there is a mutation in the asdA3 gene which eliminates aspartic acid semialdehyde dehydrogenase and has the additional mutation of providing for the deletion of the *thyA* gene to impose a thymidine requirement. Moreover, the different enteropathogenic bacteria cause a different effect within the generic method. Therefore, the species are independent and distinct.

Furthermore, the enteropathogenic bacteria require separate and distinct searches. In the instant case, the search of each species of enteropathogenic bacteria are not coextensive. In cases such as this one where descriptive bacterial information is provided, the strains are searched in appropriate databases. There is search burden also in the non-patent literature. Prior to the concomitant isolation and expression of the bacterial strain of interest there may be journal articles devoted solely to a particular strain which would not have described the other strains. Searching, therefore is not coextensive. In addition, the claims include specific functions of each bacterium. For instance Species C requires that the bacterium be able to colonize in lymphoid tissue for a sufficient time to induce antibody and cellular immunity while Species E requires the of failure to colonize deep tissue by the bacterium. Therefore a search for Species C

would not discover Species E. Thus, each search requires an extensive analysis of the art and the retrieved art will require an in-depth analysis of technical literature. As such, it would be burdensome to search all of the species together.

4. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

5. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ja-Na Hines whose telephone number is 571-272-0859. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith can be reached on 571-272-0864. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ja-Na Hines
February 15, 2006

ROBERT A. ZEMAN
PATENT EXAMINER